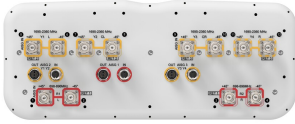


# NNH4-65B-R3B-V1



12-port sector antenna, 4x 698–896 and 8x 1695–2360 MHz, 65° HPBW, 3x RET, 3x SBT

- Features broadband Low Band (698-896 MHz) and High Band (1695-2360 MHz) arrays for 4T4R (4X MIMO) capability for 700 and 850 MHz, AWS, PCS and WCS applications
- Non-stacked high band array design provides higher gain and narrower vertical beamwidth than traditional antenna designs
- Independent RET for each pair of Arrays
- Array configuration provides capability for 4T4R (4x MIMO) on Low band and Dual 4T4R (4x MIMO) on High band
- Optimized SPR performance across all operating bands
- Excellent wind loading characteristics
- Supports re-configurable antenna sharing capability enabling control of the internal RET system using up to two separate RET compatible OEM radios

## General Specifications

<b>Antenna Type</b>	Sector
<b>Band</b>	Multiband
<b>Color</b>	Light Gray (RAL 7035)
<b>Grounding Type</b>	RF connector inner conductor and body grounded to reflector and mounting bracket
<b>Performance Note</b>	Outdoor usage   Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
<b>Radome Material</b>	Fiberglass, UV resistant
<b>Radiator Material</b>	Aluminum   Low loss circuit board
<b>Reflector Material</b>	Aluminum
<b>RF Connector Interface</b>	4.3-10 Female
<b>RF Connector Location</b>	Bottom
<b>RF Connector Quantity, mid band</b>	8
<b>RF Connector Quantity, low band</b>	4
<b>RF Connector Quantity, total</b>	12

## Remote Electrical Tilt (RET) Information

<b>RET Hardware</b>	CommRET v2
<b>RET Interface</b>	8-pin DIN Female   8-pin DIN Male
<b>RET Interface, quantity</b>	3 female   3 male

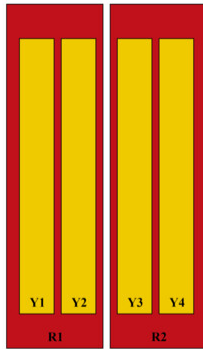
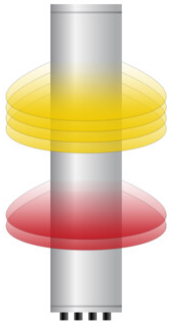
# NNH4-65B-R3B-V1

<b>Input Voltage</b>	10–30 Vdc
<b>Internal Bias Tee</b>	Port 1   Port 5   Port 9
<b>Internal RET</b>	Low band (1)   Mid band (2)
<b>Power Consumption, active state, maximum</b>	10 W
<b>Power Consumption, idle state, maximum</b>	2 W
<b>Protocol</b>	3GPP/AISG 2.0 (Single RET)

## Dimensions

<b>Width</b>	498 mm   19.606 in
<b>Depth</b>	197 mm   7.756 in
<b>Length</b>	1848 mm   72.756 in
<b>Net Weight, antenna only</b>	33.1 kg   72.973 lb

## Array Layout

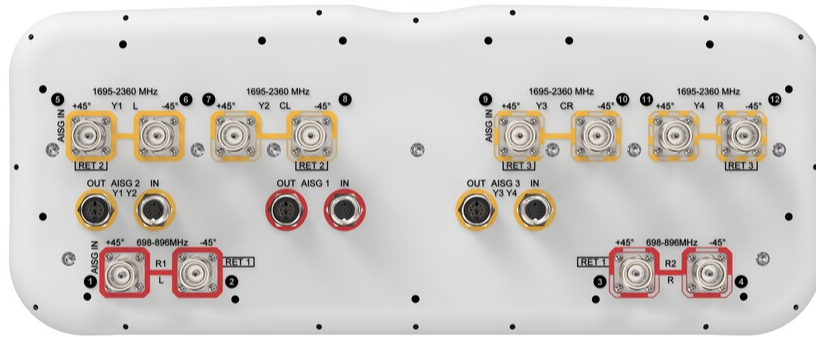


Array ID	Frequency (MHz)	RF Connector	RET (SRET)	AISG No.	AISG RET UID
R1	698-896	1 - 2	1	AISG1	CPxxxxxxxxxxxxxxxxR1
R2	698-896	3 - 4			
Y1	1695-2360	5 - 6	2	AISG2	CPxxxxxxxxxxxxxxxxY1
Y2	1695-2360	7 - 8			
Y3	1695-2360	9 - 10	3	AISG3	CPxxxxxxxxxxxxxxxxY3
Y4	1695-2360	11 - 12			

(Sizes of colored boxes are not true depictions of array sizes)

## Port Configuration

# NNH4-65B-R3B-V1



## Electrical Specifications

<b>Impedance</b>	50 ohm
<b>Operating Frequency Band</b>	1695 – 2360 MHz   698 – 896 MHz
<b>Polarization</b>	±45°
<b>Total Input Power, maximum</b>	900 W @ 50 °C

## Electrical Specifications

	<b>R1-R2</b>	<b>R1-R2</b>	<b>Y1-Y4</b>	<b>Y1-Y4</b>	<b>Y1-Y4</b>	<b>Y1-Y4</b>
<b>Frequency Band, MHz</b>	<b>698–806</b>	<b>806–896</b>	<b>1695–1880</b>	<b>1850–1990</b>	<b>1920–2180</b>	<b>2300–2360</b>
<b>RF Port</b>	1-4	1-4	5-12	5-12	5-12	5-12
<b>Gain, dBi</b>	14.5	14.9	17.3	17.9	18.2	18.6
<b>Beamwidth, Horizontal, degrees</b>	71	60	71	65	61	56
<b>Beamwidth, Vertical, degrees</b>	11.6	10.2	7.1	6.6	6.3	5.6
<b>Beam Tilt, degrees</b>	2–14	2–14	2–12	2–12	2–12	2–12
<b>USLS (First Lobe), dB</b>	16	17	16	19	18	16
<b>Front-to-Back Ratio at 180°, dB</b>	31	33	34	35	33	32
<b>Isolation, Cross Polarization, dB</b>	25	25	25	25	25	25

# NNH4-65B-R3B-V1

<b>Isolation, Inter-band, dB</b>	25	25	25	25	25	25
<b>VSWR   Return loss, dB</b>	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
<b>PIM, 3rd Order, 2 x 20 W, dBc</b>	-153	-153	-153	-153	-153	-153
<b>Input Power per Port at 50°C, maximum, watts</b>	300	300	300	250	250	200

## Electrical Specifications, BASTA

<b>Frequency Band, MHz</b>	<b>698–806</b>	<b>806–896</b>	<b>1695–1880</b>	<b>1850–1990</b>	<b>1920–2180</b>	<b>2300–2360</b>
<b>Gain by all Beam Tilts, average, dBi</b>	14.2	14.5	16.7	17.5	17.8	18.1
<b>Gain by all Beam Tilts Tolerance, dB</b>	±0.5	±0.6	±0.7	±0.5	±0.5	±0.4
<b>Beamwidth, Horizontal Tolerance, degrees</b>	±6	±5	±6	±6	±6	±3
<b>Beamwidth, Vertical Tolerance, degrees</b>	±0.7	±0.8	±0.3	±0.3	±0.3	±0.2
<b>USLS, beampeak to 20° above beampeak, dB</b>	16	16	14	16	16	15
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	22	20	26	31	28	27
<b>CPR at Boresight, dB</b>	25	19	23	24	22	19
<b>CPR at Sector, dB</b>	16	8	8	8	7	7

## Mechanical Specifications

<b>Effective Projective Area (EPA), frontal</b>	0.59 m <sup>2</sup>   6.351 ft <sup>2</sup>
<b>Effective Projective Area (EPA), lateral</b>	0.18 m <sup>2</sup>   1.938 ft <sup>2</sup>
<b>Wind Loading @ Velocity, frontal</b>	629.0 N @ 150 km/h (141.4 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, lateral</b>	191.0 N @ 150 km/h (42.9 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, maximum</b>	755.0 N @ 150 km/h (169.7 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, rear</b>	433.0 N @ 150 km/h (97.3 lbf @ 150 km/h)
<b>Wind Speed, maximum</b>	241 km/h (150 mph)

## Packaging and Weights

<b>Width, packed</b>	565 mm   22.244 in
<b>Depth, packed</b>	309 mm   12.165 in
<b>Length, packed</b>	2035 mm   80.118 in
<b>Weight, gross</b>	46.8 kg   103.176 lb

# NNH4-65B-R3B-V1

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## Regulatory Compliance/Certifications

**Agency**

ISO 9001:2015

**Classification**

Designed, manufactured and/or distributed under this quality management system

## Included Products

BSAMNT-3

- Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

## \* Footnotes

**Performance Note**

Severe environmental conditions may degrade optimum performance